

The Chronicle

of the Early American Industries Association, Inc.

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OLD STURBRIDGE VILLAGE

PREPARED BY THE STAFF OF OLD STURBRIDGE VILLAGE

The June meeting of the Early American Industries Association on the last week end of the month will mark the first occasion in five years for our group to experience that return to the spirit and surroundings of early in the last century which Old Sturbridge Village represents. A committee of the Village staff has immediate charge of the program and intends to add a significant piece to the picture of the American past that has recently been so vividly presented to the membership by the sessions at Plymouth with its recreation of the earliest days, at Williamsburg, the center of colonial government, and at Cooperstown, the step in westward expansion beyond old colonial boundaries. Old Sturbridge represents the New England village and its life just after the turn of the last century, when agriculture was still the dominant pursuit but when the beginnings of today's industries might be observed in their simplest forms.

This living museum owes its origin and subsequent development to the antiquarian interests of the late Albert B. Wells and his brother J. Cheney Wells, both associated for many years with the American Optical Company in nearby Southbridge, Massachusetts. Albert Wells collected every sort of furnishing and implement of early days, while his brother's interest in glassware and clocks assembled one of the country's outstanding displays in each of these fields. When these collections grew so large as to present a storage and exhibit problem, the Wellses found a solution in the idea of creating a village which should house these objects and show them after the manner in which they were originally used, and make more readily available their significant collections.

Attention was focused upon the present tract of two hundred acres of wood, meadowland, and riverbank. Here in 1936

old residences, shops, and mills began to be assembled, rescued from threatened destruction or disintegration, or presented by persons and groups interested in their preservation. Ten years later Old Sturbridge Village with its exhibits was opened to a public of some five thousand visitors during the season.



Last year thirty times this number toured the much-enlarged area. Present indications are that a definite program of additions to the Village lies in the immediate future, to improve what already exists, add the elements that are needed for an active community of the period, and provide additional space for greater numbers of visitors.

To enter the Village is to be transported in feeling to a time at least half a century earlier than the memory of the oldest visitor. But there is a sense of great familiarity about the buildings and furnishings that makes even the newcomer feel at home. It was in such surroundings as these that the ancestors of probably the majority of Village guests carried on the business of living, and not so remotely in time but that recog-

nition and understanding are readily possible in the much changed and ever-changing present.

There will be ample opportunity during the meeting for members to visit at leisure throughout the Village. If they elect to start at the covered entrance bridge crossing the Quinebaug River, the Freeman Farm is the first point of interest. A century and a half old, this was an operating homestead at its original site in the near vicinity. Barns for the livestock and vehicles and a milk shed enclose the yard, together with a shop for making ox yokes, a huge apple crusher and press for cider, and implement barn with a display of the farmer's tools. Farther along is the large saw frame and carriage of an up-and-down sawmill brought from Connecticut, the kind that once

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cut timbers and boards for buildings like the one that shelters it. The grist mill is next to be seen, reconstructed on a site with two centuries of mill history and retaining all the timeless fascination of this earliest of industries in any settlement. Over forty years of blacksmithing has been concentrated in the clever hands of Bert Shaw, Village smith and raconteur extraordinary, who plies the old-fashioned bellows and makes the anvil ring in his shop off the millpond. Shoeing of horses and even oxen is still an everyday affair here, or Bert will turn with equal skill to a door latch or fireplace set. Across the way is an extraordinary collection of wrought iron, a revelation in what craftsmen of the past could do with this tough material.

A woodland road above the millpond may be travelled on foot or by the horsedrawn carryall, and brings the visitor to the center of Village life, the Green. Here the Tavern, built in the manner of early hosteleries, carries on the tradition of catering to public needs at this center of community social life. Remarkable collections of woodenware, lighting devices, and American portraits and decorative art are to be found in the various rooms. Next in order up the Green stands the large Gebhard Barn, noted for its huge timbers and housing a demonstration of old-time methods of processing flax and wool, spinning into thread and weaving into fabric. Beyond stands the Richardson house, a finely-proportioned saltbox built at Podunk, Massachusetts, about 1748, furnished in that period, and typifying the residence of the Village lawyer, doctor, or minister.

At the head of the Green and dominating the whole are the imposing columned facade and steeple of the meeting house, erected originally in Sturbridge Center in 1832, moved two miles west a few years later, and by a second move brought in pieces to its present site to represent the spiritual side of the New England heritage. The opposite border of the Green exhibits the two oldest buildings in the area, the John Fenno house of 1704, and the Stephen Fitch home of 1737, rescued from decay in Willimantic, Connecticut. The summer kitchen here is given over to a demonstration of that necessary art of earlier days, candlemaking, by the two processes of dipping and moulding. Next door a fine selection of clocks from the nearly one hundred and fifty of the J. Cheney Wells collection may be examined, and just beyond stands the inseparable adjunct of any village or crossroads community, the general store. This was the business establishment of Miner Grant in Stafford, Connecticut, even before 1800, and symbolizes its role as supplier of every necessity and a few luxuries by the variety of old goods arranged on its shelves and present-day products available for purchase.

At the end of the Green opposite the meeting house is the impressively handsome General Salem Towne house, brought from Charlton five miles eastward. Construction work on this mansion has been completed, but furnishings of the interior in the fashion of the first decade of the nineteenth century lies in the future after extensive research. The grounds, however, with their formal garden, grape arbor, and brick walks, are currently approaching their finished appearance. This building will represent the home of the village squire, the wealthiest resident and acknowledge leader in the community.

What might be called the "business area" of the Village begins here, for the visitor comes next to the little yellow office raised in Worcester in the 1780's by Isaiah Thomas, printer-patriot of the Revolution and post-revolutionary period, and

founder of the American Antiquarian Society. Here a wooden flat-bed press of the mid-eighteenth century is in daily use as a demonstration of how the printed word was issued in those days.

Nearby, housed in a replica of the first building occupied by the American Optical Company, may be seen a fully-equipped optician's shop of earlier days, together with a noteworthy collection of glassware in many forms and colors. This is one of several Village collections for which plans are afoot to transfer them to a special exhibition and study area, related to but distinct from the community itself. Another is the large group of firearms and related equipment in the recreated Harrington Gun Shop next to be visited. Hardware of another kind, including locks and weighing devices, may also be studied here.

No doubt one of the most fascinating buildings to the membership because of their primary interest in tools will be the cabinet shop. Early tools for almost any imaginable purpose are on exhibit and in use here, with a cabinetmaker in attendance who subscribes fully to the old custom of fine hand work and finish. On Pottery Point stands the pottery shop where vessels can be watched rising almost magically from shapeless clay under the potter's hand, and wares of both traditional and modern shape and glaze are produced in daily demonstrations.

The planning committee has kept very carefully in mind the predilection of the membership for tools and their use, and as far as possible has made this the guiding element in the events and exhibits scheduled for the June meeting. Some of the senior members of the Association may recall with interest the last gathering at Old Sturbridge Village five years ago, but those who have joined more recently and have never been to Sturbridge may look forward to something unusual. Members familiar with the setting of five years back will be surprised to note the growth of the settlement and the activities going on within it. General direction of the coming meeting is in the hands of assistant curator Herbert C. Darbee; special events are the charge of Gladwin K. Lusk, Village program director; and Mrs. Margaret B. Munier, assistant curator, is working with the auction committee appointed last fall by President Durell.

In an effort to satisfy the interest of members in the workings of things, the program aims to unfold as much as possible by instructive demonstrations. The mysteries of early cookery and feeding a family will be the focal point at the Freeman Farmhouse kitchen, employing the recipes, utensils, and brick oven by which our ancestors somehow managed this chore. The Grist Mill will grind according to schedule to satisfy the steady demand for its various flours, but for this occasion a set of the great millstones will be "picked" by an old-timer skilled in this rare art, using the special iron tools that sharpen the stones for effective work. At the Blacksmith Shop handmade nails will be formed from the rod in the only way by which these indispensables could be had in early days. There may be some customers for horseshoeing, and this is certain to touch a familiar, nostalgic note in the remembrance of any who recall when automobiles were scarce.

The pleasant walk or horsedrawn ride from the mill area will spread the whole of the main Village grounds before the members, with not only the houses and public buildings to explore but a variety of early crafts to watch in action. Here the daily spinning and weaving demonstration on old wheels

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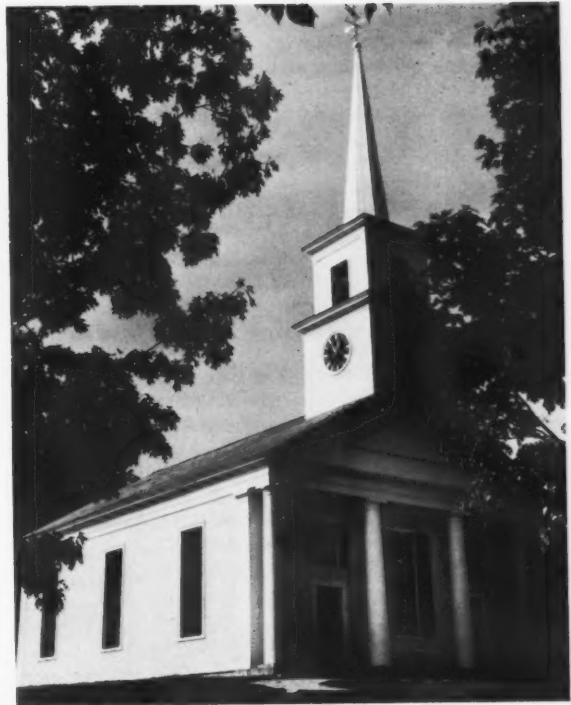
Millwrights Picking the Stone



The Potter at his Wheel



A Turner at Work



Village Church at Sturbridge



Bert Shaw, The Village Blacksmith

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and looms will be in process, and those who would like to try whether they have the knack or have kept a skill once learned, will encounter here an opportunity to run the wheel and to make a piece of cloth grow on the loom. The small table-size tape looms will also be at hand for fabrics of more modest size and sooner finished, such as a belt for those who can spare the time. Particularly with the ladies in mind, an old quilting frame will be set up with the work in progress so that all who wish may have a trial of this ancient method of fabricating household necessities and providing the basis for a social gathering centered in a common effort.

In order to satisfy the keen general interest in tools and to assist the individual's bent and participation, the old cabinet shop will be double-staffed for the week end by practicing cabinetmakers. Any usable tool in the building will be available for explanation and trial, and it is planned to hold a special outdoor demonstration of old plumbing methods — boring out a log to make water piping. Another unusual exhibit and practical exposition of well-known but frequently misunderstood tools will be provided by two woodsmen hewing logs into squared timbers with broadaxe and adz, as it was done for houses and barns in the old days.

That other well-known interest of the membership, good eating, has not been neglected in the committee's planning. Since many will be coming in during the day, meals included in the registration fee will start with Friday night supper. A cocktail party at the Village Tavern will precede that meal, which is to be a church supper served in the dining area of the Tavern by the ladies of the Sturbridge Federated Church. The now traditional "What's it" session is scheduled tentatively to coincide with the cocktail party, though precisely how it will operate is still under discussion as these notes go to the printer. Saturday morning breakfast will be up to the individual, who will find service at Publick House, Lincoln House, and the Lobby, all in the vicinity. Two years having elapsed since the last auction at Shelburne, another vendue of tools and implements donated by the membership will begin at high noon on Saturday. Two ladies of the Aid Society of the Holland Congregational Church will provide a feed bag lunch of home made food for the occasion, to be enjoyed while the sale is in progress. Saturday evening will bring the annual banquet at Lincoln House, preceded by a cocktail party on the lawn and followed by a program and speaker on a topic of specific group interest. A special breakfast on Sunday morning at the Village Tavern will include fare that could have been found at a New England farm breakfast table. Shortly afterward the Village will be open for the day and members may tour on their own. It is possible that a brief morning service will be held in the Meeting House at the head of the Green for all who wish to attend, and an effort is being made to arrange a visit for interested members to an up-and-down sawmill about thirty minutes' drive from Sturbridge, which was operating until after 1920.

Travel information and details on accommodations for this meeting are included in the folders going forward to each member.

THE AMERICAN CARPENTER

By LAWRENCE B. ROMAINE

Perusal of the "*House Carpenter's Book of Prices and Rules for Measuring and Valuing All Their Different Kinds of Work (Adapted to the Federal Currency)*", Philadelphia, 1819." Reminded me of the many, many times during the past twenty five years or so that I have tried to figure out fair prices for old doors, cornices, mouldings, fan lights, mantels and panelled room-ends. A good many people think a dealer just buys anything, triples the price and delivers the goods. All of them don't practice this system; there *IS* some sense in it all — truly. I mention this for the good of the clan, as I am no longer in the business.

Today, at most lumber yards, a new sunken panelled door (usually unseasoned) will cost from about \$12.00 (fir) up to about \$20.00 (pine). In 1819, checking the "Rules" hastily, the same doors would cost (properly seasoned or "capped") from \$1.50 to \$1.75 — hand worked with the old moulding planes. Civilization and progress, the atom and all its wonders, the scientific comforts of this century and the marvels of transportation and communication notwithstanding, I wish someone would give me that Lamp of Aladdin's and one good rub to go back to 1820. I wish there was some way I could split the profits of the past (Old Sturbridge Village, The Monroe Tavern, Shakespeare's Head, Russell Kettell's contribution to the Concord Antiquarian, and many others) with these artisans of the last century. However, there seems to be no answer to such a thought but to contribute my time to making sure that the American student of today thoroughly appreciates them.

Although this Book of Rules and its contemporary Cousins do not illustrate or describe the tools themselves, I feel there is a very strong connection between them and the cost of the work they produce. The Chronicle, Vol. 6, No. 3 for July 1953 gives a very complete list of the tools of this period and might be helpful in understanding the investment of one of these very carpenters in 1819. If there were time space, one might make a study, deducting taxes and present living costs carefully, and discover whether the present day workman was any better off than his ancestor.

Being a bookworm, it is difficult to write anything without a bibliographical background. Before going into the "Book of Prices," I would like to give you a short list of the Carpenters' Rules I have handled and studied. It is far from complete, and yet will suffice for a fairly clear understanding of wages and prices and values for about a hundred years of American carpentry, 1744 to 1836. I can also in most cases give their addresses, where they are preserved for the research of future generations, and where you may also find other contemporary data.

A SHORT LIST OF AMERICAN CARPENTERS' RULES OF WORK & PRICES.

1. "The Rules of Work of the Carpenters in the Town of Boston." Boston, 1744. (No copy of this little work has been located. My authority for its existence is to be found in the revised Rules for 1800, wherein the Carpenters "chose a large and respectable Committee out of their number" to revise the rules as set forth in 1744).
2. Same for 1795. (Massachusetts Historical Society. Boston).

Early American Industries

SANDPAPER

By LORING McMILLEN

We are not inclined to classify that lowly abrasive, the sandpaper, nor its many relatives, as tools. However, if we define tools as devices which either simplify or enable a manufacturing operation to proceed, certainly sandpaper is a tool and therefore worthy of our consideration.

The *Chronicle* has carried several valuable references to sandpaper but neither here nor in other references have I thus far found a description of its early manufacture nor its antiquity. The present article therefore is prompted by the discovery several years ago of a building at Tottenville, Staten Island, New York, where during the middle 1800's sandpaper was made and widely sold.

Sandpaper belongs to that class of tools which by their grinding or abrasive action reduce or smooth a wooden, metal or other surface. To these tools belong the steel file, the rasp, the powdered abrasives, either by themselves or when affixed to paper, cloth or other material, certain animal or fish skins, Dutch reeds (a vegetable growth containing particles of silicates) and, of course, our modern steel wool. Close relatives to these are the burnishing tools of steel or semi-precious stones set in wooden handles and which do not abrade but smooth a surface by compression. Other relatives are the grindstone and the whetstone, but since their purpose is chiefly to sharpen the edge of a tool we will not treat of them here.

The antiquity of the abrasive reduction of a surface for the purposes of shaping, polishing and sharpening must be nearly contemporary with man's first tools. For in the artifacts of primitive man we find ample evidences of abrasive tooling, the use of one stone against another being probably the earliest, since rubbing stones are found among the artifacts themselves. The introduction of sand between the rubbing surfaces or alone was an obvious discovery. Early man also discovered that for fine polishing of his tools and utensils the blades of certain grasses containing sharp particles of silicates were useful. The dried skins of mammals or fish such as the seal, dog fish or shark were found to have similar qualities and are available even to this day for fine polishing.

The file and rasp were early inventions and in common use by the Romans. A similar tool must have been known to the Egyptians as markings on their statuary would indicate. Certainly some abrasive agent was used by all early civilizations in order to achieve the fine polished surfaces of their monuments. Vitruvius, 100 B. C., mentions the use of marble dust for this purpose, probably meaning a harder material, and Pliny, 60 A. D., speaks of polishing precious stones with diamond powder. The writers and illustrators of the middle ages and the Renaissance appear to ignore the abrasive tools, yet without these the finished surfaces of these periods would be unattainable.

Moxon, in 1678, as noted by Mercer, appears to be the first writer in the modern period to touch on the subject of abrasives when he describes the use of skins and reeds for polishing wood or metal held in the lathe.

The first edition of Chambers' well known encyclopedia of 1728 mentions crushing emery and using the powder for polishing. While the use was not described the method probably was the same as today for similar abrasives: make a paste

of the powder by the admixture of oil or water and apply with a pad of cloth. By 1764 many abrasives were in common use, for on April 16, 1764 William Scandret advertized in the *New York Gazette* that he had for sale "Pumice Stone, Rotten Stone, Argil, Sandiver and Sandpaper." This is the first mention of sandpaper that I have been able to uncover and this advertizement was followed shortly on September 10, 1764 in the *Boston Gazette* by a similar one mentioning sandpaper. The earlier notice needs some explanation. Sandiver is an obsolete word and was the name of the green colored glasslike impurity or slag left over in the glassmaking industry. This, like other abrasives, had to be reduced by crushing from larger pieces to a powdered form. We also see mentioned pumice stone, rotten stone and argil — hard volcanic or natural rocks, the first two obtainable today. However, the most interesting matter is the first mention of sandpaper. It would appear from the scanty information available that sandpaper, that most useful household and shop abrasive, first made its appearance some time between 1728 and 1764.

Further investigation finds emery paper mentioned in the *New England Dictionary* of 1772. In an 1815 English publication entitled *Chemical Essays, etc.*, emery paper is described as being much adulterated by the admixture of old bottle glass which is ground fine for this purpose. Also, it is stated, "The common sandpaper is covered with a mixture of this ground glass and sharp sand."

The "*Painters, Gilders and Varnisher's Manual*," London, a new edition of 1836, mentions fish skin for rough smoothing, followed by pumice stone, then rushes, in preparing a surface for gilding. Nicholson's *Mechanic's Companion* for 1832 says old paint should be rubbed down with dry pumice stone, pumice stone being thus used in its natural state as a block.

Charles Holtzapffel, "*Turning & Mechanical Manipulations*," London, 1850, states that emery paper and cloth, glass paper and sandpaper are prepared alike. The ground particles are sifted through sieves to 6 degrees of fineness and dusted over paper brushed with glue. Flint for the same purpose is mentioned. Holtzapffel's work is the first which treats of the entire field of abrasives and many are mentioned and their use described. It can truly be said that there is no material, mineral, animal or vegetable, which either in its natural or prepared state can not be used to smooth or polish another material softer than itself.

Other works mention sandpaper and its relatives but their manufacture is ignored. Montgomery & Company, N. Y., catalogue for 1890, lists granite, flint, emery, sandpaper and cloth either in reams or in rolls in grades of 00 to 4, the coarsest. By 1900, Hammacher Schlemmer & Company, New York, were advertizing, in addition to the older abrasives, Metalite, Onite, and Durundum cloth, artificial products of the electric furnace and used largely in metal polishing. The same catalogue lists sharks or fish skins and describes their use by the woodcarver in preference to sandpaper since they could be wetted and shaped over a holder. Steel wool and shavings are also described seemingly a recent addition to the abrasive family.

Many other works were referred to in addition to the above for a description of the making of sandpaper, but none was found. However, until a short time ago a weatherbeaten frame building stood on the former estate of Elmer Butler, at Tottenville, Staten Island. A search into its origin brought to

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light the interesting story of the builder, James Pike Gage, and his profession as a manufacturer of sandpaper.

James Pike Gage was born in Woodbridge, New Jersey, January 27, 1812 and grew to manhood there. When and where he learned the business of making sandpaper we do not know. Since his father, Samuel Gage, was an associate in the business it is possible he learned the trade from him. However, in Daggett's *New York City Directory* for 1848-9, there is the following listing: "James P. Gage, sandpaper, 251 Bleeker Street, factory, 37th between 9th and 10th, H (home) between Av. 9 & 10." In 1860, according to Trow's *New York City Directory*, Gage had either a store or factory at 215 Fulton Street, and was living at 10 Mansfield Place. However, shortly after this time, he moved to Staten Island and built his factory there.

He was probably induced to make this move by Anthony Butler, whose daughter, Adrianna, Mr. Gage had married. Anthony Butler then owned the farm, later the beautiful estate of his son, Elmer Butler. The farm fronted on Raritan Bay and on the shore were great quantities of well worn pebbles of quartz and other rocks suitable for the making of sandpaper.

The factory was built close to the shore and measured 30 by 75 feet. The frame was hewn from timber from the woods nearby and clappedboarded for its height of two storeys. The story of its operation was given to the writer some years ago by Mrs. Carrie C. Jamison, daughter of Mr. Gage. White or light colored beach stones were selected along the shore and drawn to the factory. On the ground floor was located the mill for crushing these into the sharp fine particles needed in the making of sandpaper. Natural sand, worn smooth by the erosion of ages, was of little use, since its worn edges would not cut.

The mill consisted of three chief parts: first, a large mill stone, 4 or five feet in diameter and about 12 inches thick, containing an eye in the center; second, a circular trough of stone or heavy oak planks wide enough to permit the millstone to roll freely in it; and third, a long beam or pole fixed at the center of the circle made by the trough and passing through the eye of the millstone, projecting beyond sufficiently to permit the yoking of a team of horses. The beach rocks were thrown into the trough and were crushed as the heavy mill stone propelled by pole and the team, rolled over them. This ancient type of horse mill was formerly used elsewhere, particularly in the tanning industry, for crushing bark.

When thoroughly crushed the material, which had become clear sand with sharp edges, was conveyed by buckets to the second floor where the screening and glueing took place. Sheets of coarse, heavy paper were spread on inclined tables or boards. Common glue was then evenly brushed on the paper and the sand sifted by means of hand sieves over the glued surface. The surplus fell or was shaken from the inclined surface. Hand sieves, with the openings of the mesh adjusted to the eight commercial grades of sandpaper, were used in the screening and sifting. The papers were set aside to dry and then cut into sizes similar to those in use today, namely 9 x 11 inches. These were packed and shipped in wooden boxes, a gross to a box.

Each paper was stenciled, as the practice is today, with the name of the maker and the grade. However, Mr. Gage had a sense of humor and he used an interesting stencil in the form of a rebus. Deciphered, the stencil reads "Gage's Lasting Respects to All." The objects which make

up the words of the stencil are a carpenter's gauge a shoemaker's last, a pair of specs or spectacles, a toe, and drawing again from the shoemaker's bench, an awl. Interspersed with the words and signs of this pleasant salutation are the numbers indicating the various grades of sandpaper, from 00, the finest, to 3, the coarsest grade, eight in all.

The factory employed mostly boys, as much of the work was unskilled, and Mrs. Jamison remembers how raw their hands became from handling the paper while cutting, removing the curl and packing. Possibly as many as a dozen men and boys were employed in the factory at one time. Many died young, and local gossip said that dust from the crushing and sifting was a contributing cause. Mrs. Jamison said that English mills at this time mixed water during crushing to contain the dust.

The merits of Gage's sandpaper must have spread a considerable distance, for in 1860 Mr. Gage's agent in Boston ran an advertisement in the local newspaper as follows:

"Gage's sandpaper — Extensively known for its superiority over all others manufactured in the United States and good judges think it superior to any in the world. Take notice — Gage's name may be seen stamped on every quire otherwise none is genuine. Gage's Agency and Warehouse is at 42 Union Street near Haymarket Square, Boston where the above paper may be had wholesale or retail. D. S. Condit & Brothers, sole agent. Also Gage's celebrated Pumice Stone and Emery Paper, as above."

The last part of this modest advertisement shows that Mr. Gage also prepared pumice stone and made emery paper. The latter was made in a manner identical to that of sandpaper.

James P. Gage, died on March 27, 1868 and was buried in Bethel M. E. Cemetery, Tottenville, Staten Island. He left a widow and six children. His business was conducted for a short time following his death, but lacking his leadership ceased by 1874. Mr. Gage was interested in many matters and in 1859 patented a method of slowing the upward flight of a balloon and also an ingenious way of guiding a dirigible balloon over the water by anchors and sails. He was a musician and singer as well as a composer, and his loss was deeply felt in the community in which he had played an active part.

ANNOUNCEMENT

Mr. Roscoe Smith, founder of the old Museum Village of Smith's Clove in Monroe, New York has announced that the 1955 season will open officially on May 1st. On that date two new buildings will be dedicated. Of particular interest to members of the EAIA is the Gillian W. B. Bailey Craft building which will house the collection of that well-known member of our association. The other is the Natural History building which will house the skeleton of a mastodon found in a swamp nearby. Mr. Smith cordially invites all members of the Early American Industries Association to attend these ceremonies. It is expected that Mr. Cory, New York State historian, will speak at the dedications.

Mr. Smith is still searching for old and unusual tools and appliances, coaches, farm equipment, engines, etc. He is particularly anxious to find a riding cycle for three or more persons and a tandem bicycle on which two people rode side by side. Possibly members of the association can assist Mr. Smith in his search.

Early American Industries

MAKING WOOD PLANES IN AMERICA

By

FRANK H. WILDUNG, OF THE SHELBURNE MUSEUM STAFF
SHELBURNE, VERMONT

Before describing the process of making or manufacturing the wooden plane, let us look at Illustration No. 1 of a jack plane and its various parts and also note that these terms conform to the parts of the Human body. We have the stock or body, the sole or face, the toe, mouth and cheek, as well as the eye and heel, also a frog or bed, a handle or toat. These terms will be referred to at various times in order to make it clear to the reader.

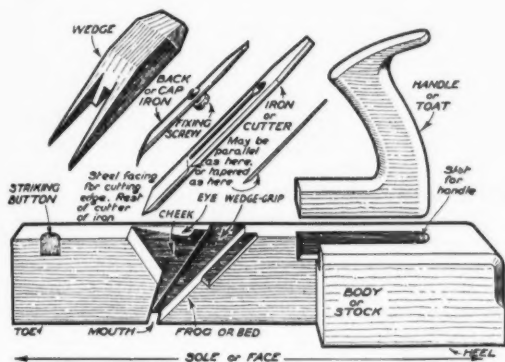


Illustration #1 The Jack Plane and its Various Parts

The body or stock of the plane was generally made of Northern Ohio white beech in America. In Germany red or white beech was used, and in England and Scotland, English beech was used.

Of the hundreds of planes I have seen, few indeed were made of other woods, unless it was boxwood, ebony, rosewood, apple or lignumvitae. Oftentimes beech planes had a sole of the harder woods mentioned here and occasionally the sole was plated or faced with iron or brass, and quite frequently only the toe was plated or faced with metal. On smoothing planes it was not uncommon to plate the point of greatest wear, the mouth.

Wood planes have changed very little during many years. Probably the addition of the back iron in the early 19th Century (it was certainly used in 1823) was the biggest advance, though this did not make a big difference in the general appearance.

It was probably in the Eighteen Twenties or thereabouts that plane-making became a specialized trade. But even before this time the general form of the plane seemed to have become settled.

Of the so called bench planes, there was the jack plane, about 18 inches long; the 24" long fore plane and the 30" long joiner plane, as well as the smoothing plane, about 8 inches long. The pattern of the handle, shape of the escape-ment, and form of the wedge was much as it is today.

Moulding planes in America were very similar to those used in England, Scotland, Germany, Austria, Norway and Sweden today, and are used by these craftsmen who come to

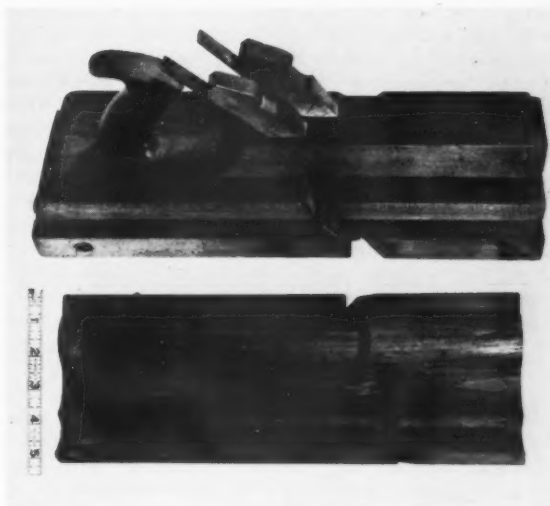


Illustration #2 A Crown Molding Plane Illustrating the Two Staggered Irons

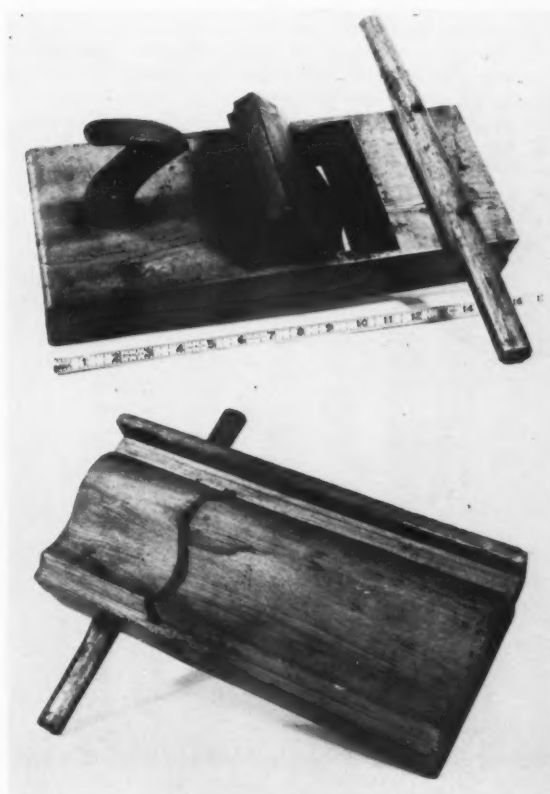


Illustration #3 Crown Molding Plane, 6" Wide With Cross Bar Handle

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America to ply these crafts even now. But the number and variety of these planes were legion, and one oftentimes wonders how some of them were ever used. Some have a sole 4 to 6 inches wide and many times the cutter was made in two pieces, one cutting ahead of the other. A great deal of speculation as to the "why for" of this has taken place, and in only one instance has a definite reason been found by the writer. For example, in one of the planes of the Frank H. Wildung collection, now at the Shelburne Museum, the plane with a single iron could not have been made since the plane would have been cut in half. (see Illustration No. 2). Oftentimes planes of this exceptional width were fitted with a cross-bar handle near the front. (see Illustration No. 3)

A rope would be fixed to this handle to enable the apprentice boy to pull the plane while the master craftsman guided it. The man guiding the plane would be cursing the other, for pulling the blamed thing off the wood, and the panting helper, sore of hand and mind, always wondering why any man wanted to plane such wood, in the first place, and consigning it, the plane, and its user to the Devil! One must have done this sort of thing, to know and appreciate what takes place.

THE IMPORTANCE OF THE CORRECT PITCH OF THE PLANE IRON

The seat or bed on which the plane iron rests is usually referred to as the frog, (see Illustration No. 1) and the angle of the frog varies according to the purpose for which the plane was intended. The common pitch is usually 45 degrees from the sole of the plane. Therefore jack and similar planes used on both soft and hard wood are generally pitched at 45 degrees.

Planes used for hard wood such as the smoothing plane, used by the cabinet maker, were made at "York Pitch" or 50

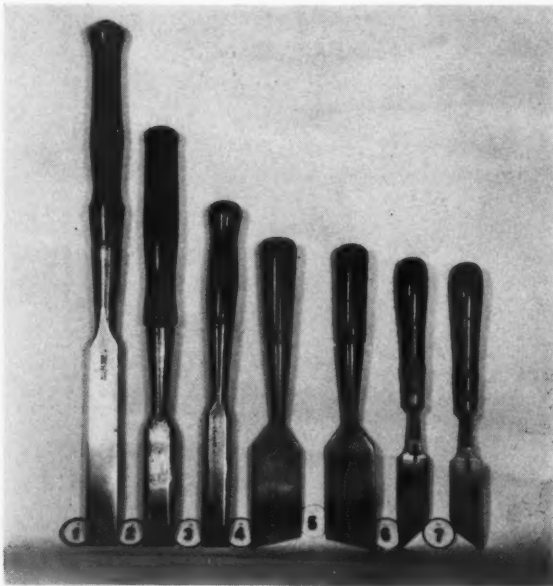


Illustration #4 Bedding and Cheeking Chisels; Numbers 1-3, Bedding Chisels, 4, 5, Broad Cheeking Chisels, 6, 7, Narrow Cheeking Chisels



Illustration #5 Floats and Throat Chisels; Numbers 1-7, Floats and Rasps, 8, Throat Chisel



Illustration #6 Numbers 1-6 Selection of Throat Chisels

Early American Industries



Illustration #7 Numbers 1-9 An Assortment of Gouges



Illustration #8 Numbers 1-2 Chamfering Chisels, 3, Straight Chisel, 4, Skew Chisel, 5, Eyeing Chisel, 6, Small Gouge, 7, Small Saw, 8, Trimming Knif, 9, Saw

degrees. Middle pitch, or 55 degrees was used on moulding. In the plane with a cutter almost upright (such as the toothing plane) the action is more or less a scraping one. Moulding planes are usually made without cap or back iron. This is one of the reasons for a more upright blade, especially when the wood is hard or fairly brittle.

And, of course a great deal of effort is wasted unless one takes great care in sharpening and using the plane with the right pitch to the iron for the type of wood used.

Having decided upon the pitch of the iron, and whether it has a back iron or not, one is then ready to select the wood for the plane in mind.

The craftsmen selected his wood, keeping in mind that the wood nearest the bark is the hardest. In cutting his block for the body or stock of his plane, the medullary rays at the front of the plane stock should be nearly vertical, so that the ends of these rays appear on the sole as a series of minute specks. This improves the wearing quality of the plane. Thus the annular growth rings will be almost parallel across the width of the stock or body.

Oftentimes the old craftsmen would leave their benches upon the arrival of a load of beech, to select the pieces best suited, rough out the stock and hang it in a barrel of linseed oil to soak until the time was available to make the plane. The tools required to make a plane by the professional planemaker were numerous, as can be seen from the following illustrations No. 4 thru No. 9. These comprise a set of 41 tools.

These tools were owned by Hartman Eckman of Sandusky, Ohio, who started work as a planemaker at the Sandusky Tool Co. of that city in 1882. He confined himself to making bench planes and cooper's tools as well as all special planes, and those made of boxwood, rosewood, apple, ebony, etc., many of which he made entirely by hand. A fine craftsman, he rose to the position of foreman in the bench plane department.

These tools were secured for the Frank H. Wildung collection, now at the Shelburne Museum, by Mr. William Lorenzen (from Mr. Eckman's daughter) who has given me all the data on the manufacture of planes as carried out at the Sandusky Tool Co. from 1868 to 1926.

Mr. Lorenzen started with the company in 1888 as a boy in the packing department. Being of an ambitious nature, in the course of 14 years he was at the head of his department. He was finally elected to the directorship and then to assistant manager which position he filled for many years.

(To Be Continued in the July Issue)

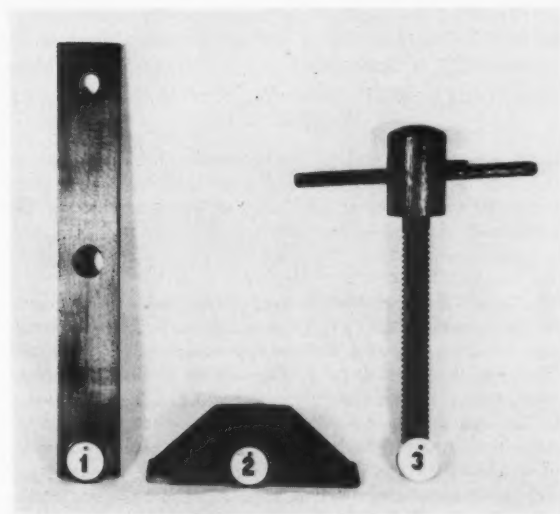


Illustration #9 Number 1 and 3 Bench Holdfasts, 2 Mitre Maker

The Chronicle

The Chronicle

Early American
Industries Association, Inc.

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men, and other workers.

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Communications regarding the contents of *The Chronicle* and back issues should be addressed to the Editor; suggestions for members to Robert G. Hill; all other matters to the President. Address as here given.

DUES

The annual dues are payable January 1st, and are as follows. Active members \$5.00; Helpful members, \$7.50; Encouraging members, \$10.00; Enthusiastic members, \$15.00, and Delighted members, \$25.00. There is no distinction between classes, except the amount of dues, but *The Chronicle* cannot be financed unless a considerable number of the members pay more than \$5.00. Each member is expected to voluntarily place himself in the class which represents the amount he is willing to contribute to the support of the Association for the current year. Life membership costs \$50.00. *The Chronicle* is sent to all members without additional charge.

Printed on the Press of The Virginia Gazette, Founded 1736.

FROM THE PRESIDENT

The Early American Industries Association was formed in the early 30's by a small group interested in the study and preservation of the tools and in the recording of the processes of the early American crafts. From the beginning, one of the main purposes of the organization has been to bring to its members, through the medium of *THE CHRONICLE*, authentic information on the tools and processes with which the early settlers of our country lived and worked and accomplished so much.

Over the past twenty-five years *THE CHRONICLE* has been edited by members of the Association who have given unstintingly of their time and knowledge to make it outstanding in its field, and the articles and illustrations which have appeared in it have been, I should say, contributed almost one hundred percent by our members.

However, it is becoming more and more difficult to get our members to write for *THE CHRONICLE*, either because they feel the knowledge they have of a particular craft or tool is probably common knowledge to most of the membership, or they are timid about putting down what they know about an industry without first doing the necessary research to make certain that what appears is well documented.

Since *THE CHRONICLE* comes to members as part of the yearly dues, and we have avoided including in it any type of advertising, we have over past years just barely been able to make ends meet. Until very recently no funds were available to reimburse a contributor for even his out-of-pocket expenditures in getting an article together, much less to pay him for his time and effort in doing the research and writing of the article.

From funds raised through the generosity of some of our members and the auction held during the meeting at Shelburne, Vermont, in 1953, your Directors have been able to make a modest amount available to the Editor for use in defraying the expense of securing suitable articles. Even this has not produced the number of articles *THE CHRONICLE* needs to maintain its position as the outstanding publication of its kind, full of authentic information on the tools and procedures of the early crafts.

At the Cooperstown Meeting last October, the Directors discussed the desirability of establishing a research fund to be used by a special committee of the Directors to secure the services of qualified individuals to do research and prepare reports on selected early crafts for publication in *THE CHRONICLE*, together with illustrations showing how the tools were actually used.

Most of the old artisans who knew how to use the primitive tools are gone, and due to the rapid mechanization of industry during the past hundred years, few apprentices have been trained in the use of the old tools or methods. With the passing of these artisans and apprentices, the researcher has to depend almost entirely upon the written word of those who were acquainted with the early crafts and recorded the procedures — sometimes not too accurately or completely.

Therefore, the Directors feel that work should be started with reasonable dispatch so the researcher can not only get

(Continued on Page 24)

Early American Industries

The American Carpenter

(Continued from Page 16)

3. Same for 1800. (Avery Library, Columbia University, New York City). (See also the current issue of "Old Time New England" published by the Society for the Preservation of New England Antiquities, 141 Cambridge St., Boston, for a complete copy of the Rules for 1800 with notes).
4. "The Carpenter's Rules of Work for the Worcester South-West United Architectural Society. Printed for Its Members. Worcester, 1815." (Weathercock House).
5. "The New-York Book of Prices for Manufacturing Cabinet and Chair Work." N. Y. 1817. (Metropolitan Museum of Art, and New York State Historical Association at Cooperstown, New York).
6. "The House Carpenter's Book of Prices . . ." Phil. 1819. (See illustration).
7. "The Cincinnati Cabinet-Makers' Book of Prices for Manufacturing Cabinet-Ware. Cincinnati, 1830. (Metropolitan Museum of Art. New York City).
8. "James Gallier's American Builders' General Price Book and Estimator." Boston, 1836. (Avery Library, Columbia University — and other libraries on request).

I wish I could lend you some of my own enthusiasm. There is something so fascinating about taking a book like this from room to room (as I have done here at Weathercock House) and seen and felt that one man did once upon a time for .12½c. It isn't just the money — it just puts you in a different world, and makes you forget what you are really up against today, which is, I think, good for all of us. As I type I am looking at our front room panelling; it measures about 15' x 7'3" high. In one of these little booklets it states: — "Panel breast work to chimneys, per foot, superficial — .08c" I am not Scrooge and I wouldn't trade for the Empire State Building, tax free, but to stop and think that this was in all probability made by one man at a cost of approximately \$8.40 — well, I don't know about you but it just makes me feel good.

The introduction or preface on the verso of the title page starts as follows:

"Drawing designs, making out bills of scantlings, collecting materials, and sticking up stuff are to be charged by the carpenter in proportion to the trouble." The plans, the bills, the assembling of necessary lumber, brick etc. and the building of scaffolding were not set prices. The honesty and integrity of the members of the "respectable gentlemen" involved were trusted to use a scale of values "Calculated to the means of an honest livelihood in an equitable reward to faithful industry."

* ("Stuff" is used throughout for unfinished, rough lumber; hence I interpret this to mean scaffolding).

There is of course a great deal of material and data that most of us (including myself) would not understand. There are also pages of framing, flooring and other fundamentals that most of us never notice. I shall try to spend the pages of this issue on those details all of us admire, and with which many are familiar due to their own restorations and upkeep. Can you imagine having your roof reshingled today (and ours needs it badly) at "New shingling, 3 feet shingles, 11 inches

courses, laid per square — \$1.60?" Don't try too hard, for you'll never make it again.

Stay on the roof a minute. Suppose you needed another bedroom up there. "DORMANT WINDOWS Flat tops of a middling pitch containing 12 lights of 8 x 10 glass with single cornice cheeks boarded—each — \$4.00." (Just when the word Dormer came in, I don't know; but when you think of it, they were all sleeping rooms, so why not dormant?) Of course if you wanted to get fancy and have a ridge dormant with a plain double cornice, pilasters and brackets etc., you could run this up to \$20.00.

The things we all notice with pride and pleasure are doors, whether battened or with the fine old raised panels. Let's skip over beams, frames, partitions, weather boarding and floors. "Ledge doors made of cedar or sap pine boards plained and grooved (hangings and fastenings included) measuring about 20 feet, - Each—.87½c." Hangings, according to a local carpenter, probably meant fittings, and the fastenings, the latches, bolts or hooks. "Ditto, hung with hooks and hinges well rivetted - .93c." In other words a plain single thickness beaded braced door with strap hinges, pintels and latch about 7' x 30". I'm looking at one now — that's the fun of it. However, "Pannel Doors" come a little higher, as noted in paragraph two. "Two or four pannel doors framed with half inch quarter round moulding, charge per yard .93c, or .10c per foot." Assuming the same size door as above, this would be \$2.00.

For a front door, just in case you have some of these masterpieces in mind, "Outside four pannel doors, framed with ½ quarter round, lined as common, per yard \$1.33 or .15c per foot." Such a door would I imagine be perhaps 8' x 36" at least, one side pannelled and the inside battened "common," and would cost about \$3.60. Shall we order say a dozen, just in case we might need replacements?

Most of us have handled the delicate inside folding shutters, whether our own or belonging to some Museum or institution — and some of us have paid some rather fancy prices for them for restoration. These in 1819 were made at about the same cost as the panel doors. For example "Back laps framed square to fall behind the wainscot or architrave, for windows of 18 lights, glass 8½ x 12", per superficial foot — .16c." "If divided in four pannels, per foot — .33c." I have hunted for those with the hearts cut out of the top panel with no success; I imagine this was just another extra left to the integrity of the workman.

Many of us are in the habit of trying to date houses by the size of the lights. It seems to be a general rule of thumb that before 1800 we had nothing here but 6 x 8" panes. In 1744 they were mostly 6x8", but by 1795 we find many "lights" "7 x 9 or 10 and some 14", and in 1819, the majority are 8x10 and up to 14x17." A good common sash for 8 x 10" glass cost about .07½c per foot. If however (and this is a new one on me) you wanted *mahogany sashes*, the carpenter was entitled to add *one third* to the above cost, and if the sash to be Gothic in design, he could add *one fifth*. If we dropped down Main street to examine the shops and found Circular Show Windows with "open pilasters on each side, proper base and caps and cornice," the price jumped to \$1.67 per running yard.

Let's stand at the foot of one of those magnificent stairs in any one of the grand old halls preserved throughout the Country. Take a good look at the 24" raised pannelled wainscoting, the graceful risers, the turned newel and its mahogany

The Chronicle

railing that seems to wind slowly up to the second floor, and listen:

"Square wainscot plained both sides, pannels raised on one side — per yard — .60c. If stairs are wainscoted, including skirting, capping and open pilaster, charge per riser — \$3.22. For fluting a newel post, - each - \$1.60. Open newel stairs, 4 ft. between the newel and the wall, ramped rails and brackets, the steps and risers dovetailed and glued, with skirting, half rail and pilaster - per rise - \$3.00. If Mahogany is used for posts, rails, ballusters, pilasters and wainscot (if you know of one of these, I'd like to see it), add one fourth of the foregoing prices." If I can ever find time, I'm going to catch one of our local carpenters and try to put him over the hurdles with this book. A figure for 1955 on such a job would surely be a revelation. I'd probably end up with three Unions involved and like as not a Senate investigation before we finished the job.

MANTLES are surely one of the most interesting embellishments of the heirlooms of this period of American workmanship. In these originality of design and detail stand out more than any other part of the house. If you have some good ones at home, fine, but if not, take this along with you when next you visit Old Sturbridge Village, Cooperstown, Shelburne, Richmondtown, Staten Island or Colonial Williamsburg — perhaps to the next meeting at Sturbridge. The change in prices of work from 1744 to 1836 were not as drastic as from about 1900 to 1955, and these figures will serve well for comparison in most of our best restorations and preservations.

"To kitchens—plain, cornice and bedmould—in rooms of common size - per foot - .26c. Plain cornice and common dentil or fret bedmould - per foot - .20c. "Mantles with Roman dentils — with festoons, ribbons and drops - per foot - .50c. With human figures, urns etc. laid on, - each extra - .25c. If there are small swelling trusses, or trusses prepared for the carver, charge for each - .33c. Trusses with shells - .80c to \$1.00. Tablets with shells - \$1.00. Chimney pieces plastered in with stiles and rails - per lineal foot - .67c to \$1.33. Mantel pilasters plain, including base and caps, each - \$1.26. Fluted - \$2.00."

I hope that I have selected the most interesting figures. I shall not try to drag you through such chapters as "Tabernacle Frames, Flats, Balconies, Lattice Work, Lintels, Cellar Doors, Porches, Gutters, Trunks, Fences, Gates for various purposes, Cisterns and several pages of additional prices for circular stairs etc. Pages 36-50 are devoted to a "List of Prices of the Stone Masons & Brick Layers in Philadelphia," which would in itself make another article quite as long. Even the List of Subscribers, from John P. Ash, Jr. to Abijah Young of Newark, N. J. and including one of Doctor Rush's boys, would make a short tale for the student of the workmen of 1819. However, I think I have taken enough space and reading time from both editor and reader for one issue.

For now, take an old moulding plane if you have one, an old piece of pine and a Sunday morning and see what you can do for .12½c. If you can make one small panel (no machines now) with a nice ¼ round moulding in a decent frame, with no sharp up to date modern edges, properly morticed and pinned, with butterfly hinges and a hand turned button ("fastenings, hooks and hinges well rivetted") — add up your time and bring it to Sturbridge. We'll auction it off for your Church.

SPRING AUCTION

One of the highlights of the Spring Meeting at Old Sturbridge Village will be the second Auction of the Early American Industries Association. As many of you will recall, the first Auction was held at the Shelburne, Vermont Meeting in 1953. This initial auction, thanks to the excellent work of Mr. George Simmons and others, was a success from every standpoint. It provided members who attended the Shelburne Meeting with excellent entertainment and it provided the Treasury of the Early American Industries Association with over \$1,000 of much needed funds.

The forthcoming auction will take place at noon on June 25 at Sturbridge Village. The Ladies Aid Society of the Sturbridge Federated Church will provide a "feed bag lunch of home made food" which should make the occasion more enjoyable. The Auction Committee is composed of Mr. Sidney Stewart, chairman, Mr. Lawrence S. Cook, Mrs. Gordon Hamilton, Mr. Stanley Howe, Mr. Arthur G. Pyle and Mr. Charles Vanderveer, Jr. The Committee plans to accept some items on a Commission basis in order to secure some excellent pieces for the Auction. However, since the success or failure of such an auction depends largely on donations by the members, you are urged to forward your list or lists to Mr. Stewart, 190 Nehoiden Street, Needham 92, Massachusetts. The Committee reserves the right to limit the number of items to be offered by any one member.

Mr. Frank O. Spinney, Director of Old Sturbridge Village, has kindly consented to our holding the auction at the Village and has appointed Mrs. Margaret Munier of his Curatorial Staff, to act as advisor and co-ordinator of the Committee's work.

The Officers and Editors urge each of you to assist the Committee in every way possible in making this Auction a success. Get your list to Mr. Stewart as soon as possible.

(Continued from Page 22)

information from the written word, early illustrations and examination of tools now in the possession of museums and individual collectors, but can also have the advice and assistance of the few skilled craftsmen still living who have actually used the tools.

Your President writes this article in the hope that it will draw interest from our members to the extent of signifying what they will be willing to contribute to start such a research fund, and also to urge them to contact any corporations or foundations with which they may have connections to ascertain whether such corporations or foundations could be interested in having research work done in any particular industry and would be willing to contribute to the Research Fund of The Early American Industries Association.

I think we should set our Research Fund goal at \$10,000, which, while it may sound ambitious, is certainly not impossible of attainment if each of us contributes as generously as he can, and we all work together to pool our ideas for the raising of additional funds.

Contributions to the Early American Industries Association are approved deductions for income tax purposes.

Will you write direct to me at 500 Dublin Avenue, Columbus 15, Ohio.

EDWARD DURELL
President

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